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09/720,736	12/29/2000	Migaku Takahashi	OSP-10239	4239

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EXAMINER

UHLIR, NIKOLAS J

ART UNIT

PAPER NUMBER

1773

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/720,736

Applicant(s)

TAKAHASHI ET AL.

Examiner

Nikolas J. Uhler

Art Unit

1773

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, and 5-41 is/are pending in the application.
- 4a) Of the above claim(s) 16-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-15, 25-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. This office action is in response to the applicants amendment/arguments dated 5/08/03. The examiner deems the applicant's amendment sufficient to overcome all of the prior applied rejections for the reasons set forth in the section below entitled, "Response to Arguments." However, the case is not in condition for allowance in light of the new grounds of rejection presented below.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 5 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In the instant case, claims 5 and 6 are dependent on claim 4, which has been cancelled, which renders these claims incomplete. Correction is required.

Claim Rejections - 35 USC § 102

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1-3, 5, 11-13, 15, and 35-38 are rejected under 35 U.S.C. 102(b) as being anticipated by Takahashi et al. (JP11-186033).

6. Claim 1 requires a magnetic thin film consisting of an Iron carbide film, wherein the iron carbide film comprises an α' phase as a principle phase and at least carbon and iron as constituent elements, wherein the iron carbide film has a body centered

Art Unit: 1773

tetragonal structure and a c-axis constitutes an axis of hard magnetization and a c-plane constitutes an axis of easy magnetization, wherein the α' phase is a martensite phase.

7. The examiner notes that it is the examiners duty to interpret the claims in light of the specification. However, limitations from the specification are not read into the claims. Bearing this in mind, the examiner interprets claim 1 to be met by any FeC having an easy axis of magnetization, as there is no reference in the claim that establishes which direction the magnetization of the film is oriented.

8. Bearing the above interpretation in mind, Takahashi teaches a vertical magnetic recording medium that utilizes a martensite phase FeC film (section 14). Such a film meets all of the applicants claim 1 requirements. In addition, no other phases are taught to be present in the martensite film of Takahashi, thus the examiner takes the position that the limitations of claim 2, which require an FeC film comprising a single α' phase are met.

9. Regarding the limitations of claim 3, wherein applicant requires a specific X-Ray diffraction pattern for the FeC film. In light of the fact that the film of Takahashi et al. is formed of the same elements (Fe and C) and is in the same phase (α' /martensite) as that of film required by the applicant in claim 1, the examiner takes the position that the film of Takahashi et al. will necessarily meet the requirements of claim 3.

10. Regarding claim 5, wherein the applicant requires the magnetic anisotropy energy for deflecting the spontaneous magnetization towards the c-axis from the c-plane be 2 orders of magnitude larger than the magnetic anisotropy energy required

Art Unit: 1773

when the spontaneous magnetization is deflected from the c-axis to the c-plane. The examiner interprets this claim to be dependent on claim 1, not cancelled claim 4.

Although not expressly taught by Takahashi, the examiner takes the position that this limitation is met, as the film of Takahashi has the same composition and is in the same phase as that of the instantly claimed invention.

11. Regarding claims 11-13, Takahashi et al. teaches forming the FeC film on a 30nm thick film of Iron (section 14). It is the examiners position that the film of Iron meets the limitations of claim 11, which requires that the FeC film be formed on a film having an interatomic distance that differs from that of the FeC film by $4 \pm .4$ angstroms or less. This is due to the facts that claim 13 specifically lists Iron as a suitable material meeting the requirements of claim 11, and because the base film is made of Iron only, this film necessarily meets the limitations of claim 12.

12. Regarding the limitations of claim 15, wherein the applicant requires an FeC film having negative magnetocrystalline anisotropy constants (k_u). Although not expressly taught by Takahashi, the examiner takes the position that these limitations are met, as the film of Takahashi et al. is made of a similar composition (FeC), has an identical crystal structure (bct), and is in the same phase (α' /martensite) as the films shown by figure 16 of the instant specification that possess this property.

13. Regarding claims 35-38, The limitations of these claims are intended use limitations and do not appear to be further limiting in so far as the structure of the product is concerned. "[I]n apparatus, article, and composition claims, intended use must result in a structural difference between the claimed invention and the prior art in

Art Unit: 1773

order to patentably distinguish the claimed invention from the prior art. **If the prior art structure is capable of performing the intended use, then it meets the claim.** In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art." *In re Casey*, 370 F.2d 576, 152 USPQ 235 (CCPA 1967); *In re Otto*, 312 F.2d 937, 938, 136 USPQ 458, 459 (CCPA 1963). See MPEP § 2111.02. In the instant case, it is the examiners position that the FeC film is capable of performing the intended uses of claims 35-38, as it is identical in composition, phase, and crystal structure as that of the film claimed in the instant claim 1.

Claim Rejections - 35 USC § 103

14. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

15. Claims 1-3, 5, 7-8, 15, 25-29, and 34-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi et al. (US4858049) in view of Takahashi et al. (JP11-186033).

16. Claim 1 requires a magnetic thin film consisting of an Iron carbide film, wherein the iron carbide film comprises an α' phase as a principle phase and at least carbon and iron as constituent elements, wherein the iron carbide film has a body centered tetragonal structure and a c-axis constitutes an axis of hard magnetization and a c-plane constitutes an axis of easy magnetization, wherein the α' phase is a martensite phase.

Art Unit: 1773

17. The examiner notes that it is the examiners duty to interpret the claims in light of the specification. However, limitations from the specification are not read into the claims. Bearing this in mind, the examiner interprets claim 1 to be met by any FeC having an easy axis of magnetization, as there is no reference in the claim that establishes which direction the magnetization of the film is oriented.

18. Bearing the above interpretation in mind, Kobayashi et al. (Kobayashi) teaches a magnetic film and a magnetic head using the magnetic film (column 1, lines 5-10 and 58-65). The magnetic film is formed using Iron (Fe) as its main component and at least one additional element selected from B, N, C, and P, which are interstitially soluble in Fe (column 2, lines 1-15). In a specific embodiment, Kobayashi teaches a magnetic recording head comprising a main magnetic film FeC film containing 7.5 atomic % C, wherein the film exhibits a saturation magnetization of 21.3 kG (2.13 Tesla), and a coercivity of 0.6 Oe (column 4, example 2, table 2). The magnetic films are formed by sputtering from an Fe target having carbon chips placed on it onto a substrate that is heated to 250⁰ C. This film is suitable for use in heads used for both longitudinal and perpendicular recording (column 1, lines 5-10 and 58-65).

19. Kobayashi fails to teach that the FeC film has a BCT crystal structure and has an α' (martensite) phase as its main phase, as required by claim 1.

20. Regarding the requirement that the FeC comprise a α' phase (martensite). Kobayashi does not explicitly teach this limitation. However, Kobayashi does teach that the FeC film is suitable formed via sputtering from an Fe target having carbon chips on its surface onto a glass substrate that has been heated to 250⁰ C (column 3, lines 30-35

Art Unit: 1773

and column 5, lines 39-40). Further, Takahashi teaches a method for forming an FeC film that is virtually identical to the method utilized by Kobayashi. The method of Takahashi results in the formation of an FeC film having a α' phase and a bct structure (section 18).

21. Thus, in light of the similarities between the methods utilized by Takahashi and Kobayashi, the examiner takes the position that the FeC film formed by Kobayashi will necessarily possess the required α' phase and BCT crystal structure required by claim 1.

22. The limitations of claim 2 require the Iron carbide film to comprise a single α' phase. The examiner takes the position that this limitation is met in light of the similarities between the method utilized by Kobayashi and Takahashi to form the FeC film, and the fact that Takahashi does not disclose that any other phases are present in a FeC film generated by this method.

23. The limitations of claim 3 require a specific X-ray diffraction pattern for the FeC film. The examiner takes the position that these limitations are met, as the film of Kobayashi has identical composition (FeC), crystal structure, and phase (α') that of the instant invention.

24. Regarding claim 5, wherein the applicant requires the magnetic anisotropy energy for deflecting the spontaneous magnetization towards the c-axis from the c-plane be 2 orders of magnitude larger than the magnetic anisotropy energy required when the spontaneous magnetization is deflected from the c-axis to the c-plane. For the purpose of examination, the examiner interprets this claim to be dependent on claim 1

Art Unit: 1773

and not on cancelled claim 4. Although not expressly taught by Kobayashi, the examiner takes the position that this limitation is met, as the film of Kobayashi has the same composition and is in the same phase as that of the instantly claimed invention.

25. The limitations of claims 7 and 8 require the FeC film to contain between 0.5-15 atomic %, more specifically 1-12 atomic % C respectfully. These limitations are met as set forth above for claim 1.

26. Regarding the limitations of claim 15, wherein the applicant requires an FeC film having negative magnetocrystalline anisotropy constants (k_u). Although not expressly taught by Kobayashi, the examiner takes the position that these limitations are met, as the film of Kobayashi is made of a similar composition (FeC), has an identical crystal structure (bct), and is in the same phase (α' /martensite) as the films shown by figure 16 of the instant specification that possess this property.

27. The limitations of claim 25 require a magnetic head utilizing the FeC film of claim 1 as a portion of the magnetic pole material of the recording head. These limitations are met as set forth above for claim 1.

28. The limitations of claims 26 and 27 and require the magnetic head to be suitable for longitudinal or perpendicular recording. These limitations are met as set forth above for claim 1.

29. The limitations of claim 28 require the magnetic head to be capable of recording on a magnetic medium having an easy axis that is horizontal to the film surface. This limitation is met as set forth above for claim 1.

Art Unit: 1773

30. The limitations of claim 29 require the magnetic recording device of claim 28 to comprise a recording medium having an easy axis that is parallel with or perpendicular to the surface of a substrate. Kobayashi in at least one embodiment states that a suitable recording medium includes a perpendicularly magnetizable film having an easy axis perpendicular to the surface of the film (column 4, lines 60-65). Thus, this limitation is met.

31. Regarding claims 34-38, The limitations of these claims are intended use limitations and do not appear to be further limiting in so far as the structure of the product is concerned. "[I]n apparatus, article, and composition claims, intended use must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. **If the prior art structure is capable of performing the intended use, then it meets the claim.** In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art." *In re Casey*, 370 F.2d 576, 152 USPQ 235 (CCPA 1967); *In re Otto*, 312 F.2d 937, 938, 136 USPQ 458, 459 (CCPA 1963). See MPEP § 2111.02. In the instant case, it is the examiners position that the FeC film is capable of performing the intended uses of claims 35-38, as it is identical in composition, phase, and crystal structure as that of the film claimed in the instant claim 1.

32. Claims 6 and 39-41 rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi as modified by Takahashi as set forth above for claim 1, further in view of Carey et al. (US6542341).

Art Unit: 1773

33. Kobayashi as modified by Takahashi above does not teach a magnetic thin film having an easy axis in plane with the film surface and a hard axis perpendicular to the film surface as required by claim 6. Further, this combination does not teach a magnetic head having an FeC film having an easy axis in plane with that of the surface of the film, wherein the film has a saturation magnetization ≥ 1.5 Tesla and a coercivity of ≤ 2 oe, more specifically ≤ 1 Oe, as required by claims 39-49.

34. However, it is noted that Kobayashi as modified by Takahashi does state that the FeC film is suitable for use as a magnetic film in a magnetic head that is utilized for longitudinal or perpendicular recording (column 1, lines 5-10 and 58-65). Bearing this statement in mind, it is the examiner position that it is known in the art of magnetic recording that the magnetization of the main pole of a reading/reproducing head is preferably oriented in the same direction as the magnetization of the medium that the head is to record/reproduce data to/from. This is evidenced by Carey et al. at column 4, line 1-7, which shows that magnetic films utilized in magnetic heads that are to record/reproduce data from longitudinal media should have their magnetization oriented longitudinally (column 4, lines 1-7).

35. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to control the easy axis direction of the FeC film taught by Kobayashi as modified by Takahashi to suit the type of media that is to be recorded.

36. One would have been motivated to make this modification in light of the fact that Kobayashi as modified by Takahashi specifically states that the FeC film is suitable for longitudinal or perpendicular recording, and the fact that Carey shows that the magnetic

Art Unit: 1773

films utilized in recording and reproducing heads have their magnetization oriented in the same direction as that of the medium they are used with.

37. Thus, the limitations of claims 6 and 39 are met when the FeC film is utilized in a longitudinal recording head and has its magnetization oriented in parallel the surface of the film.

38. Regarding the limitations of claims 40 and 41, these limitations are met as set forth above for claim 1, as in at least one embodiment, the FeC film of Kobayashi meets all of the saturation and coercivity requirements of these claims.

39. Claims 9, 11-12 and 14 rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi in view of Takahashi as set forth above for claim 1, further in view of Hori et al. (US5006395).

40. Kobayashi as modified by Takahashi above does not teach an FeC film that further contains Co, as required by claim 9. However, Hori teaches that adding Co to an FeC film improves the magnetic characteristics of the film (column 18, example 9).

41. Therefore it would have been obvious to one with ordinary skill in the art at the time the invention was made to add Co as taught by Hori '395 to the FeC film of Kobayashi as modified by Takahashi.

42. One would have been motivated to make this modification due to the teaching in Hori '395 that the magnetic characteristics of an FeC film is improved by the addition of Co to the film.

43. Kobayashi as modified by Takahashi does not teach the limitations of Claims 11-12 and 14, which require the FeC film to be formed on a thin film having an interatomic

Art Unit: 1773

distance within 4 angstroms +/- 10% of that of the FeC film (claim 11), more specifically wherein the principal element of the thin film has lattice constants within 4 angstroms +/- 10% that of the FeC film (claim 12), more specifically wherein the thin film is principally formed from at least one element Ag, Au, Pd, Pt, Rh, Al, Ir, and Ru (claim 14).

44. However, Hori teaches that However, Hori '395 teaches that by forming an FeC based film on a substrate film that is made from the group IVa-VIIa and Pt group elements, the orientation of the FeC film is improved (column 2, lines 40-52). It is noted that "pt group" elements are generally known to include Platinum, Palladium, Rhodium, Ruthenium, Osmium, and Iridium.

45. Therefore it would have been obvious to one of ordinary skill in the art to form utilize Platinum, Palladium, Rhodium, Ruthenium, Osmium, and Iridium as taught by Hori 395' as the substrate for the FeC film of Takahashi.

46. One would have been motivated to make such a modification due to the teaching in Hori '395 that the orientation of an FeC film is improved by utilizing a substrate formed of one of these materials. Regarding the specific selection of Pt group materials for the substrate, one would have been motivated to select these materials as they are taught to be equivalent to the other materials listed as suitable.

47. Regarding the requirement that the base film have a lattice constant within 4 +/- .4 angstroms of that of the FeC film. The examiner takes the position that these limitations are met by the combination of Kobayashi as modified by Takahashi and Hori, as the FeC film has the same crystal structure and phase as that of the instant

Art Unit: 1773

invention, and the base film is formed from one of the materials listed in claim 14 as a suitable material exhibiting this property.

48. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi as modified by Takahashi as applied to claim 1 above, and further in view of Hori et al. (US5068147).

49. Kobayashi as modified by Takahashi et al. fails to teach adding nitrogen as a third element to an FeC film, as required by claim 10.

50. However, Hori 137 teaches that by adding N to a FeC film the coercivity of the resulting film can be controlled, with increasing amounts of nitrogen resulting in a film having increased coercivity and vice versa (figure 33).

51. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to add nitrogen as taught by Hori et al. into the FeC film of Kobayashi as modified by Takahashi in order to control the coercivity of the resulting film.

52. Claims 1, and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reed (WO93/12928) in view of Tanaka et al. (US5854727), Kobayashi, Takahashi, and The Wiley Encyclopedia of Electrical and Electronics Engineering.

53. Claims 30 and 31 require a magnetic device comprising a hard magnetic film constituting a longitudinal magnetic recording medium, an α' phase FeC thin film formed on the hard magnetic film, and an intermediate layer between the hard magnetic film and the FeC film, wherein the α' FeC has an easy axis in the c-plane direction and an easy axis in the c-axis direction.

Art Unit: 1773

54. The examiner once again interprets the limitations of claim 1 to be met when any FeC film is utilized, as the limitations of claim 1 do not give a reference which establishes which direction the easy axis of magnetization is oriented.

55. Reed et al. teaches a magnetic recording medium that comprises a substrate, a longitudinal or vertical magnetic recording layer (equivalent to applicants claimed hard magnetic material) on the substrate, a non-magnetic break layer (equivalent to applicants claimed non-magnetic thin film) on the magnetic layer, and a soft magnetic material formed overtop the break layer (Page 8, lines 1-15). Suitable materials for the soft magnetic material include soft magnetic materials utilized known in the art, examples of which include alloys of Fe, Ni, and Co, such as NiFe, Sendust, CoZrNb, and others (page 20, lines 9-19).

56. Reed et al. fails to teach utilizing an α' /martensite phase FeC film as the soft magnetic layer.

57. However, Tanaka et al. teaches known soft magnetic materials for use as keeper layers in magnetic recording media include FeC, NiFe, sendust, and CoZrNb.

58. Therefore it would have been obvious to one of ordinary skill in the art to use an FeC alloy as the soft magnetic layer of Reed et al.

59. One would have been motivated to make this modification due to the fact that FeC is taught to be equivalent to NiFe, sendust, and CoZrNb.

60. However, Reed et al. as modified by Tanaka et al. still fails to teach using an α' phase FeC.

Art Unit: 1773

61. However, it is known in the art that high magnetic saturation materials must be utilized to form keeper layers, as evidenced by the Wiley Encyclopedia under the section entitled "Keeper Layered Magnetic Media." Further, Kobayashi teaches an FeC film that exhibits very high magnetic saturation that is formed by a method similar to that of Takashi et al, which forms a martensite (α') phase FeC film.

62. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the α' /martensite phase FeC film of Kobayashi as the soft underlayer of Reed et al. as modified by Tanaka et al.

63. One would have been motivated to make this modification due to the fact that FeC is recognized as an equivalent soft magnetic material with respect to NiFe, sendust, and CoZrNb, the fact that high saturation magnetization materials must be utilized to form a keeper layer, and the fact that martensite phase FeC is taught to exhibit high saturation magnetization.

64. Claims 1 and 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al. (US5854727), in view of Kobayashi and Takahashi and the Wiley Encyclopedia of Electrical and Electronics Engineering.

65. Claims 1 and 32-33 require a magnetic device comprising a hard magnetic film serving as a recording layer of a perpendicular recording medium, an α' phase FeC thin film formed under the hard magnetic film, and an intermediate layer formed between the FeC layer and the recording layer, wherein the α' FeC has an easy axis in the c-plane direction and a hard axis in the c-axis direction.

Art Unit: 1773

66. Once again the limitations of claim 1 are deemed by the examiner to be met by any FeC film as the limitations of claim 1 do not provide a reference that establishes the orientation of the direction of the easy axis.

67. Tanaka et al. teaches a magnetic recording medium comprising a substrate, a soft magnetic underlayer on the substrate, a perpendicular magnetic recording layer (equivalent to applicants hard magnetic layer) formed overtop the soft under layer, and an intermediate layer formed between the soft layer and recording layer. The Soft underlayer is manufactured from materials including FeC, Permalloy, and Sendust (column 6, lines 11-37).

68. Tanaka et al. does not teach a recording medium that utilizes an α' FeC layer, as required by claims 32-33.

69. However, Kobayashi teaches an FeC material that is manufactured via a similar method as Takahashi et al., which results in the formation of an α' FeC material. This film has very high saturation magnetization, which is known in the art to be desirable in keeper layers, as evidenced by The Wiley Encyclopedia of Electrical and Electronics Engineering under the section entitled "Keeper-Layered Media."

70. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the α' /martensite phase FeC film of Kobayashi as the soft magnetic layer in Tanaka et al.

71. One would have been motivated to make this modification due to the fact that Tanaka et al. teaches that FeC materials are suitable soft magnetic materials for the underlayer, the fact that it is known that high saturation magnetization is desirable for

Art Unit: 1773

keeper (soft magnetic) layers, and the fact that the FeC film of Kobayashi is specifically taught to exhibit high magnetic saturation.

Response to Arguments

72. Applicant's arguments with respect to claims 1-3 and 5-38 have been considered but are moot in view of the new ground(s) of rejection. The applicants arguments were directed towards the fact that Takahashi taught a vertical recording medium, and did not teach the requirements of the prior claim 4, which required the film of the instant invention to have an easy axis in the c-plane. The examiner feels the interpretation of the limitations of claims 1 and 4 in the prior office action was not made sufficiently clear in the prior office action (i.e. the interpretation that these claims were read on by any film having any easy axis in light of the fact that claims 1 and 4 provide no reference that establishes which direction the c-axis and x-plane is oriented). Thus, the interpretation of the claims in this manner constitutes and new grounds of rejection. The examiner sincerely apologizes for any inconvenience imparted to the applicant as a result.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nikolas J. Uhler whose telephone number is 703-305-0179. The examiner can normally be reached on Mon-Fri 7:30 am - 5 pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on 703-308-2367. The fax phone numbers

Art Unit: 1773

for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-0389.


nju
July 4, 2003


Paul Thibodeau
Supervisory Patent Examiner
Technology Center 1700